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Val Leu Cys Pro Tyr Asn Arg Lys Glu Ser Lys Ser Ile Lys Tyr Trp
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Cys Leu Trp Glu Gly Ala Gln Asn Gly Arg Cys Pro Leu Leu Val Asp
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Ser Glu Gly Trp Val Lys Ala Gln Tyr Glu Gly Arg Leu Ser Leu Leu
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Glu Glu Pro Gly Asn Gly Thr Phe Thr Val Ile Leu Asn Gln Leu Thr
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Gln Glu Thr Ser Leu Gly Gly Lys Glu Glu Phe Val Ala Thr Thr Glu
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Ala Val Asp Glu Leu Gly Lys Val Leu Thr Pro Thr Gln Val Lys Asn
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Arg Pro Thr Ser Ile Ser Trp Asp Gly Leu Asp Ser Gly Lys Leu Tyr
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Thr Leu Val Leu Thr Asp Pro Asp Ala Pro Ser Arg Lys Asp Pro Lys
65   70   75   80

Tyr Arg Glu Trp His His Phe Leu Val Val Asn Met Lys Gly Asn Asp
                85   90   95

Ile Ser Ser Gly Thr Val Leu Ser Asp Tyr Val Gly Ser Gly Pro Pro
                100   105   110

Lys Gly Thr Gly Leu His Arg Tyr Val Trp Leu Val Tyr Glu Gln Asp
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Arg Pro Leu Lys Cys Asp Glu Pro Ile Leu Ser Asn Arg Ser Gly Asp
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His Arg Gly Lys Phe Lys Val Ala Ser Phe Arg Lys Lys Tyr Glu Leu
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Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser
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Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn
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Lys Leu Lys Lys Leu Glu Leu Ser Asp Asn Arg Val Ser Gly Gly Leu
65   70   75   80

Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Thr His Leu Asn Leu Ser
                85   90   95

Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu
            100   105   110

Glu Asn Leu Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu
        115   120   125

Asn Asp Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Leu Thr Tyr
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Leu Asp Gly Tyr Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp Ala
145   150   155   160

Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp Glu
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Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp Glu
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Asp Glu Glu Glu Glu Gly Glu Glu Asp Val Ser Gly Glu Glu Glu
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Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu Asp
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Asn Asp Gln Gly Asn Arg Thr Thr Pro Ser Tyr Val Ala Phe Thr Asp
        35              40              45

Thr Glu Arg Leu Val Gly Asp Ala Ala Lys Ser Gln Ala Ala Leu Asn
    50              55              60

Pro His Asn Thr Val Phe Asp Ala Lys Arg Leu Ile Gly Arg Lys Phe
65              70              75              80

Ala Asp Thr Thr Val Gln Ser Asp Met Lys His Trp Pro Phe Arg Val
            85              90              95

Val Ser Glu Gly Gly Lys Pro Lys Val Arg Val Cys Tyr Arg Gly Glu
        100             105             110

Asp Lys Thr Phe Tyr Pro Glu Glu Ile Ser Ser Met Val Leu Ser Lys
        115             120             125

Met Lys Glu Thr Ala Glu Ala Tyr Leu Gly Gln Pro Val Lys His Ala
    130             135             140

Val Ile Thr Val Pro Ala Tyr Phe Asn Asp Ser Gln Arg Gln Ala Thr
145             150             155             160

Lys Asp Ala Gly Ala Ile Ala Gly Leu Asn Val Leu Arg Ile Ile Asn
            165             170             175

Glu Pro Thr Ala Ala Ala Ile Ala Tyr Gly Leu Asp Arg Arg Gly Ala
        180             185             190

Gly Glu Arg Asn Val Leu Ile Phe Asp Leu Gly Gly Gly Thr Phe Asp
        195             200             205

Val Ser Val Leu Ser Ile Asp Ala Gly Val Phe Glu Val Lys Ala Thr
    210             215             220

Ala Gly Asp Thr His Leu Gly Gly Glu Asp Phe Asp Asn Arg Leu Val
225             230             235             240

Asn His Phe Met Glu Glu Phe Arg Arg Lys His Gly Lys Asp Leu Ser
            245             250             255
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Gly Asn Lys Arg Ala Leu Arg Arg Leu Arg Thr Ala Cys Glu Arg Ala
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Lys Arg Thr Leu Ser Ser Ser Thr Gln Ala Thr Leu Glu Ile Asp Ser
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Leu Phe Glu Gly Val Asp Phe Tyr Thr Ser Ile Thr Arg Ala Arg Phe
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Glu Glu Leu Cys Ser Asp Leu Phe Arg Ser Thr Leu Glu Pro Val Glu
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Lys Ala Leu Arg Asp Ala Lys Leu Asp Lys Ala Gln Ile His Asp Val
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Val Leu Val Gly Gly Ser Thr Arg Ile Pro Lys Val Gln Lys Leu Leu
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Gln Asp Phe Phe Asn Gly Lys Glu Leu Asn Lys Ser Ile Asn Pro Asp
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Glu Ala Val Ala Tyr Gly Ala Ala Val Gln Ala Ala Val Leu Met Gly
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Thr Gly Lys Ala Asn Lys Ile Thr Ile Thr Asn Asp Lys Gly Arg Leu
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Ala Glu Asp Glu Ala Gln Arg Asp Arg Val Ala Ala Lys Asn Ser Leu
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Glu Ala His Val Phe His Val Lys Gly Ser Leu Gln Glu Glu Ser Leu
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Arg Asp Lys Ile Pro Glu Glu Asp Arg Arg Lys Met Gln Asp Lys Cys
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Arg Glu Val Leu Ala Trp Leu Glu His Asn Gln Leu Ala Glu Lys Glu
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Glu Tyr Glu His Gln Lys Arg Glu Leu Glu Gln Ile Cys Arg Pro Ile
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Phe Ser Arg Leu Tyr Gly Gly Pro Gly Val Pro Gly Gly Ser Ser Cys
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Ala Asn Lys Arg His Gly Ser Trp Lys Ile Gln Leu Asn Ala Thr Ser
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Val Thr His Lys Pro Asn Ala Ile Gln Met Ala Leu Ser Val Cys Glu
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Asp Leu Ile Ser Ser Gln Val Tyr Ala Ile Leu Val Ser His Pro Pro
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Thr Pro Asn Asp His Phe Thr Pro Thr Pro Val Ser Tyr Thr Ala Gly
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Phe Tyr Arg Ile Pro Val Leu Gly Leu Thr Thr Arg Met Ser Ile Tyr
        115                 120                 125

Ser Asp Lys Ser Ile His Leu Ser Phe Leu Arg Thr Val Pro Pro Tyr
    130                 135                 140

Ser His Gln Ser Ser Val Trp Phe Glu Met Met Arg Val Tyr Ser Trp
145                 150                 155                 160

Asn His Ile Ile Leu Leu Val Ser Asp Asp His Glu Gly Arg Ala Ala
                165                 170                 175

Gln Lys Arg Leu Glu Thr Leu Leu Glu Glu Arg Glu Ser Lys Ala Glu
            180                 185                 190

Lys Val Leu Gln Phe Asp Pro Gly Thr Lys Asn Val Thr Ala Leu Leu
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Page 34

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Glu Trp Asn Gly Met Met Gly Glu Leu Leu Ser Gly Gln Ala Asp Met
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Phe Ser Lys Pro Phe Lys Tyr Gln Gly Leu Thr Ile Leu Val Lys Lys
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Glu Ile Pro Arg Ser Thr Leu Asp Ser Phe Met Gln Pro Phe Gln Ser
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Thr Leu Trp Leu Leu Val Gly Leu Ser Val His Val Val Ala Val Met
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Leu Tyr Leu Leu Asp Arg Phe Ser Pro Phe Gly Arg Phe Lys Val Asn
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Leu Asp Arg Pro Glu Glu Arg Ile Thr Gly Ile Asn Asp Pro Arg Leu
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Arg Asn Pro Ser Asp Lys Phe Ile Tyr Ala Thr Val Lys Gln Ser Ser
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Val Asp Ile Tyr Phe Arg Arg Gln Val Glu Leu Ser Thr Met Tyr Arg
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Gln Leu Ala Phe Ala Ala Val Asn Val Trp Arg Lys Asn Leu Gln Asp
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Arg Lys Ser Gly Arg Ala Glu Pro Asp Pro Lys Lys Lys Ala Thr Phe
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Ser Lys Asp Thr Ser Thr Gly Gly Gly Arg Gly Ala Leu Gln Asn Gln
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Leu Ala His Gln Ser Asn Ser Thr Asn Ile Phe Phe Ser Pro Val Ser
65   70   75   80

Ile Ala Thr Ala Phe Ala Met Leu Ser Leu Gly Thr Lys Ala Asp Thr
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His Asp Glu Ile Leu Glu Gly Leu Asn Phe Asn Leu Thr Glu Ile Pro
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Glu Ala Gln Ile His Glu Gly Phe Gln Glu Leu Leu Arg Thr Leu Asn
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Gln Pro Asp Ser Gln Leu Gln Leu Thr Thr Gly Asn Gly Leu Phe Leu
    130   135   140

Ser Glu Gly Leu Lys Leu Val Asp Lys Phe Leu Glu Asp Val Lys Lys
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Leu Tyr His Ser Glu Ala Phe Thr Val Asn Phe Gly Asp Thr Glu Glu
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Ser Arg Val Arg Thr Gly Arg Ser Ile Arg Gly Phe Cys Leu Pro Pro
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Glu Ala Ala Ala Lys Ser Lys Asn Cys Ser Ser Pro Gln Arg Gly Gly
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Val Leu Gln Lys Thr Ser Ser Ser Ile Thr Leu Gln Ala Ala Arg Val
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Thr Cys Leu Ala Glu Asn Ala Leu Gly Gln Val Ser Cys Ser Ala Trp
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Glu Ile Gln Glu Ser Glu Asp Phe His Phe Glu Gln Arg Gly Thr Gln
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Lys Pro Lys Thr Val Ser Glu Glu Glu Arg Lys Val His Ser Pro Gln
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Gln Val Asp Phe Arg Ser Val Leu Ala Lys Lys Gly Thr Ser Lys Thr
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Pro Val Pro Glu Lys Val Pro Pro Pro Lys Pro Ala Thr Pro Asp Phe
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Arg Ser Val Leu Gly Gly Lys Lys Lys Leu Pro Ala Glu Asn Gly Ser
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Lys Pro Ala Glu Thr Leu Lys Pro Met Gly Asn Ala Lys Pro Ala Glu
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Thr Leu Lys Pro Met Gly Asn Ala Lys Pro Asp Glu Asn Leu Lys Ser
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Ala Ser Lys Glu Glu Leu Lys Lys Asp Val Lys Asn Asp Val Asn Cys
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Cys Ser  Val Ser Ile Glu Lys  Ala Leu Pro Glu Asp  Arg Gly Leu
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Tyr Lys  Cys Val Ala Lys Asn  Asp Ala Gly Gln Ala  Glu Cys Ser
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Cys Gln  Val Thr Val Asp Asp  Ala Pro Ala Ser Glu  Asn Thr Lys
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Glu His  Cys Gly Cys Tyr Thr  Leu Leu Val Glu Asn  Lys Leu Gly
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Leu Thr  Leu Ser Trp Tyr Gly  Ser Ser Tyr Asp Gly  Gly Ser Ala
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Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Ser Asp Leu
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